

Claim 16 is rejected under 35 USC 103(a) over Bhargava I in view of Bhargava II (USPN 5,422,489). This rejection is respectfully traversed.


The primary reference on which all the rejections are based is Bhargava I which shows displays based on doped nanocrystal (DNC) phosphors (see title; abstract; col. 1, lines 61-67; col. 2, lines 1-31). The nanocrystal is a host, col. 5, lines 14, 55. The color is determined by the dopant, e.g. Mn for yellow, Tm for blue, Tb for green, and Eu for red, col. 2, lines 8-25; col. 4, lines 8-19; col. 5, lines 26-27. Fig. 1 shows band diagrams for five rare earth dopants. The nanocrystal size affects the efficiency of the dopant emission, not its color, Fig. 3; col. 2, lines 50-52; col. 5, lines 40-43.

By contrast, Applicant uses just the nanocrystals themselves, i.e. undoped nanocrystals, and the size of the nanocrystal determines the color, i.e. the color is produced by selecting nanocrystals of the right size to produce that color. Claim 1 has been amended to recite these features which clearly distinguish from Bhargava I. Since base Claim 1 is not taught or suggested by Bhargava I and therefore is deemed allowable, all dependent claims should also be patentable. Therefore it is submitted that all the rejections have been obviated.

New Claims 21-23 have been added to explicitly recite the feature that light of a single wavelength can be used to excite the nanocrystals of all colors.

Respectfully submitted,

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APPENDIX

Version with markings to show changes.

IN THE CLAIMS:

Claim 1 is amended as follows:

1. (Amended) A multicolor display apparatus, comprising:
an array of undoped semiconductor nanocrystals arranged to form a plurality of pixels of different colors, wherein the sizes of the nanocrystals determine the colors;
a pixel addressing system operatively associated with the nanocrystal array for selectively optically exciting the nanocrystals to produce a luminescent color pattern of pixels.

8. (Amended) The apparatus of Claim 7 further comprising an analyzer between the [backlight source] nanocrystal array and liquid crystal modulator.

New Claims 21-23 are added:

21. The apparatus of Claim 1 wherein the pixel addressing system selectively optically excites the nanocrystals with light of substantially a single wavelength.

22. The apparatus of Claim 2 wherein the backlight source is a source which produces light of substantially a single wavelength.

23. The apparatus of Claim 7 wherein the backlight source is a source which produces light of substantially a single wavelength.